

Appl. No. 10/052,733
Atty. Docket No. G-262M (CP-1221)
Amdt. Dated November 18, 2004
Reply to Office Action of February 19, 2004
Customer No. 27752

REMARKS

Application Amendments

Claim 1 is pending in the present application. No claim amendments have been made.

Rejections Under 35 USC 103(a) Over US Patent No. 5,073,174 to Vayssie et al.

Claim 1 is rejected under 35 USC 103(a) as being unpatentable over US Patent No. 5,073,174 to Vayssie et al. ("Vayssie"). The Examiner asserts that Vayssie discloses 2-hydroxymethyl-4-aminophenol and 2-(beta-hydroxyethyl)-4-aminophenol as useful hair dye precursors. The Examiner notes that Vayssie does not disclose Applicants' claimed compound. However, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to use Applicants' claimed compound as a hair dye intermediate because Vayssie discloses that a one-carbon homolog and a simple structural isomer of Applicants' claimed compound have the same utility as that disclosed by Applicants. Thus, the Examiner asserts that one of ordinary skill in the art would expect Applicants' claimed compound to have similar properties. Applicants respectfully traverse the present rejection based on the following comments.

- A. A *prima facie* case of obviousness has not been established because Vayssie does not teach or suggest all of Applicants' claim limitations.

Vayssie does not teach or suggest all of Applicants' claim limitations, and, therefore, does not establish a *prima facie* case of obviousness (MPEP 2143.03). Applicants' claim 1 is directed to the compound of 4-amino-2-(1-hydroxy-ethyl)-phenol. Applicants' claimed compound is a suitable primary intermediate for hair coloring compositions and provides good oxidative coloration to hair while avoiding the drawbacks of p-aminophenol.

In contrast, Vayssie discloses 2-hydroxymethyl-4-aminophenol and 2-(beta-hydroxyethyl)-4-aminophenol as para dye precursors which are suitable for use in hair dyeing compositions. Vayssie fails to disclose Applicants' claimed 4-amino-2-(1-

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hydroxy-ethyl)-phenol. Moreover, the two compounds disclosed in Vayssie differ structurally from Applicants' claimed compound such that Applicants' claimed compound would not be expected to have similar properties by one of ordinary skill in the art. Specifically, both of the compounds disclosed in Vayssie, to which the Examiner refers, are primary alcohols, whereas Applicant's claimed compound is a secondary alcohol. Additionally, Applicants' claimed compound provides ideal 6-membered internal hydrogen bonding between hydroxyl groups such that dye compounds formed are photochemically more stable. The 2-hydroxyethyl-4-aminophenol compound disclosed in Vayssie provides unfavorable 7-membered internal hydrogen bonding.

Thus, Vayssie does not teach or suggest Applicants' claimed compound, nor would one of ordinary skill in the art have expected the Applicants' claimed compound to have similar properties to the compounds disclosed in Vayssie. Accordingly, claim 1 is novel and nonobvious over Vayssie and any modification thereof.

B. Even if a *prima facie* case of obviousness has been established, Applicants have overcome the presumption by a showing of superior and unexpected results.

Alternatively, even if a *prima facie* case has been established, Applicants have overcome the presumption of obviousness by a showing of superior and unexpected results for a hair dyeing composition comprising Applicants' claimed compound versus hair dyeing compositions comprising known primary intermediate compounds which are structurally similar to Applicants' claimed compound. *See In re Wiechert*, 370 F.2d 927 (Cust. & Pat. App. 1967); *see also* MPEP 2144.09. Although arguments of counsel cannot take the place of factually supported objective evidence, rebuttal evidence can be presented in the specification. *See In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995). "Consistent with the rule that all evidence of nonobviousness must be considered when assessing patentability, the PTO must consider comparative data in the specification in determining whether the claimed invention provides unexpected results." *In re Soni*, 54 F.3d at 750.

Specifically, in Table 2 at page 23 of the specification, Applicants have demonstrated superior and unexpected results with respect to the color intensity of the red color achieved from treating hair with hair dyeing compositions comprising Applicants'

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claimed compound 4-amino-2-(1-hydroxy-ethyl)-phenol as the primary intermediate in combination with several different coupler compounds. This set of hair dyeing compositions is contrasted with two other sets of hair dyeing compositions comprising 2-methyl-p-aminophenol ("2-Me-PAP") or 3-methyl-p-aminophenol ("3-Me-PAP"), respectively, as the primary intermediate in combination with the same several different coupler compounds. Table 2 provides the a^* value, which is an indication of redness as measured by a spectrophotometer, for each resulting combination.

In one combination, the respective primary intermediate compounds are coupled with 2,4-diaminophenoxyethanol. The a^* value for hair treated with a composition comprising Applicants' claimed compound is 10.1. In contrast, the a^* value for hair treated with a composition comprising 2-Me-PAP is 5.2, and the a^* value for a composition comprising 3-Me-PAP is 7.9. The percent difference in the a^* value between 2-Me-PAP and 3-Me-PAP is about 52 %, whereas the percent difference in the a^* value between 2-Me-PAP and Applicants' claimed compound is more than about 94 %. Thus, the color intensity of the red color achieved from treating hair with a composition comprising Applicants' claimed compound 4-amino-2-(1-hydroxy-ethyl)-phenol as the primary intermediate and 2,4-diaminophenoxyethanol as the coupler is clearly superior to that achieved from using either 2-Me-PAP or 3-Me-PAP in combination with the same coupler.

In another combination, the respective primary intermediate compounds are coupled with 1-naphthol. The a^* value for hair treated with a composition comprising Applicants' claimed compound is 12. In contrast, the a^* value for hair treated with a composition comprising 2-Me-PAP is 8, and the a^* value for a composition comprising 3-Me-PAP is 8.9. The percent difference in the a^* value between 2-Me-PAP and 3-Me-PAP is about 1 %, whereas the percent difference in the a^* value between 2-Me-PAP and Applicants' claimed compound is 50 %. Again, it can be seen that the color intensity of the red color achieved from treating hair with a composition comprising Applicants' claimed compound as the primary intermediate is clearly superior to that achieved from using either 2-Me-PAP or 3-Me-PAP.

In the remaining combinations, Applicants' claimed compound also demonstrates superior red color intensity versus 2-Me-PAP. With respect to 3-Me-PAP, Applicants' claimed compound demonstrates superior red intensity in all but one of the combinations.

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In the combination with 5-amino-2-methylphenol as the coupler, Applicants' claimed compound has an a^* value of 13.6, whereas 2-Me-PAP has an a^* value of 8 and 3-Me-PAP has an a^* value of 14.4. It is noted, though, that Applicants' claimed compound 4-amino-2-(1-hydroxy-ethyl)-phenol is a 2-substituted p-aminophenol derivative, as is 2-Me-PAP. The 3-Me-PAP primary intermediate is a 3-substituted p-aminophenol derivative. Thus, Applicants' claimed compound unexpectedly provides consistently superior results versus another 2-substituted p-aminophenol derivative, a compound which is structurally more similar than a 3-substituted p-aminophenol derivative. The inconsistency in achieving superior results for Applicants' claimed compound versus a compound which is structurally less similar demonstrates the high degree of unpredictability in the art of oxidative hair dye design and formulation.

Applicants respectfully submit that the consistently superior red color intensity achieved by compositions comprising Applicants' claimed compound 4-amino-2-(1-hydroxy-ethyl)-phenol as a primary intermediate over compositions comprising a structurally similar primary intermediate compound is sufficient to rebut a *prima facie* case of obviousness. Therefore, Applicants' claims 1 is novel and nonobvious over Vayssie and any modification thereof.

CONCLUSION

In light of the remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicant respectfully requests reconsideration of this application and allowance of Claim 1.

Respectfully submitted,

Mu'III Lim et al.

By M. Dressman

Marianne Dressman
Attorney for Applicant(s)
Registration No. 42,498
(513) 626-0673

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